

**Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Previously Presented) The method of claim 16 further comprising:  
prioritizing the plurality of routing factors; and  
for each routing factor, prioritizing the allowable values.
2. (Previously Presented) The method of claim 1 further comprising:  
determining a weight for each routing factor automatically based on the prioritization  
of the routing factor; and  
for each routing factor, determining a cost for each of the allowable values  
automatically based on the prioritization of the values.
3. (Previously Presented) The method of claim 16 further comprising  
determining if the routing factor applies to the link and if the routing factor does not apply,  
assigning a large cost value to the weighting value.
4. (Previously Presented) The method of claim 16 further comprising  
determining if an allowable value matches the characteristic of the link; and if no allowable  
value matches the characteristic of the link, using a large cost value for the cost value.
5. (Canceled)
6. (Previously Presented) The method of claim 16 further comprising:  
selecting the plurality of routing factors from a set of routing factors;  
for each selected routing factor, selecting one or more allowable values;  
assigning a weight to each selected routing factor; and  
for each selected routing factor, assigning each selected allowable value a cost.
7. (Original) The method of claim 6 wherein the weights assigned to the selected  
routing factors are based on a prioritization of the factors.

8. (Original) The method of claim 6 wherein the costs assigned to the selected allowable values for each selected routing factor are based on a prioritization of the allowable values.

9. (Previously Presented) The method of claim 6 wherein the selected one or more allowable values includes a default value, and wherein the default value matches the characteristic of the link if no other allowable value matches the characteristic of the link.

10. – 15. (Canceled)

16. (Previously Presented) A method for determining a route through a network, the method comprising:

identifying a plurality of routes, wherein each route comprises a plurality of links;

calculating a route cost for each route by summing a link cost calculated for each link of the plurality of links; and

selecting a route based on the calculated route costs;

wherein the link cost for each link is calculated by

determining a weighting value for a routing factor of a plurality of routing factors;

determining a cost value by matching an allowable value of the routing factor to a characteristic of the link;

determining a weighted cost value by combining the determined weighting value with the determined cost value;

repeating the determining operations for each of the plurality of routing factors; and

summing the determined weighted cost value for each of the plurality of routing factors to determine the link cost.

17. (Previously Presented) The method of claim 16 wherein the link costs are calculated before identifying the plurality of routes.

18. (Previously Presented) The method of claim 16 wherein the link costs are calculated as the plurality of routes are identified.

19. (Previously Presented) The method of claim 18 further comprising determining if the routing factor applies to the link; and if not, disregarding the link.

20. (Previously Presented) The method of claim 19 further comprising determining if an allowable value for the routing factor matches a characteristic of the link; and if not, disregarding the link.

21. (Previously Presented) The method of claim 18 further comprising determining if all of the plurality of routing factors apply to the link; and if not, disregarding the link.

22. (Previously Presented) The method of claim 16 further comprising determining if an allowable value for the routing factor matches a characteristic of the link; if not, determining if an allowable value has a default value; and if an allowable value has a default value, determining the cost value based on the default value.

23. (Previously Presented) The method of claim 16 wherein the plurality of routes are identified before the link costs are calculated.

24. (Previously Presented) The method of claim 16 wherein combining the determined weighting value with the determined cost value comprises multiplying the determined weighting value and the determined cost value.